

WHAT IS CLAIMED IS:

1 1. A method of manufacturing a metal-covered, molded plastic
2 component, comprising:
3 providing a film sheet having a decorative layer of metal, the film
4 sheet being selected from the group consisting of polyester, polyurethane and
5 polycarbonate;
6 forming the film sheet to obtain a preform;
7 placing the preform in a mold cavity of an injection mold having a
8 shape defining the desired plastic component;
9 injecting a thermoplastic elastomer into the mold cavity of the
10 injection mold to generate a structural carrier for the preform, the generation of the
11 structural carrier creating sufficient pressure and heat to bond the structural carrier
12 to a bottom surface of the preform to form the metal-covered molded plastic
13 component; and
14 preventing the preform from moving in the mold cavity during the
15 step of injecting.

1 2. The method of claim 1, wherein the thermoplastic elastomer
2 is selected from the group consisting essentially of a thermoplastic polyolefin,
3 thermoplastic urethane, polyester, polycarbonate; acrylonitrile/ butadiene/styrene,
4 polypropylene, a mixture of acrylonitrile/butadiene/styrene and polycarbonate, and
5 mixtures thereof.

1 3. The method of claim 1, wherein the step of injecting a
2 thermoplastic elastomer into the mold cavity occurs at a temperature of
3 approximately 420°F and at a pressure of 50 psi to 15,000 psi.

1 4. The method of claim 1, further comprising the step of cutting
2 the preform prior to the step of placing.

1 5. The method of claim 1, wherein the structural carrier has a
2 flexural modulus in the range of 15,000 to 400,000 psi.

1 6. The method of claim 1, wherein the structural carrier has a
2 durometer in the range of 15 Shore D to 100 Shore D.

1 7. The method of claim 1, wherein the film sheet has a total
2 thickness of approximately 0.2 mils.

1 8. A method of manufacturing a metal-covered, molded laminate
2 automotive component, comprising:

3 inserting a film sheet having a decorative layer of metal into a forming
4 station to form the film sheet into a predetermined automotive component shape to
5 create a formed film sheet having top and bottom surfaces, the film sheet being
6 selected from the group consisting of polyester, polyurethane and polycarbonate;

7 placing the formed film sheet in a mold cavity of an injection mold
8 having a shape defining the automotive component;

9 injecting a thermoplastic elastomer into the mold cavity of the
10 injection mold, such that the thermoplastic elastomer is in mating contact with the
11 bottom surface of the formed film sheet, to generate a structural carrier for the
12 formed film sheet, the generation of the structural carrier creating sufficient pressure
13 and heat to bond the structural carrier to the bottom surface of the formed film sheet
14 to form the metal-covered, molded laminate automotive component; and

15 preventing the preform from moving in the mold cavity during the
16 step of injecting.

1 9. A method of manufacturing a metal-covered, molded plastic
2 component, comprising:

3 providing a film sheet having a decorative layer of metal, the film
4 sheet being selected from the group consisting of polyester, polyurethane and
5 polycarbonate;

6 forming the film sheet to obtain a preform;

7 placing the preform in a mold cavity of an injection mold having a
8 shape defining the desired plastic component; and

1 10. The method of claim 9, wherein the polyvinylidene fluoride
2 comprises more than 50% of the total thickness of the film sheet.

1 12. The method of claim 9, wherein the step of injecting a
2 thermoplastic elastomer into the mold cavity occurs at a temperature of 420°F and
3 at a pressure of 50 psi to 15,000 psi.

1 14. The method of claim 9, wherein the structural carrier has a
2 flexural modulus in the range of 15,000 to 400,000 psi.

1 16. The method of claim 9, wherein the film sheet has a total
2 thickness of approximately 0.2 mils.

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3 inserting a film sheet having a decorative layer of metal into a forming
4 station to form the film sheet into a predetermined automotive component shape to
5 create a formed film sheet having top and bottom surfaces, the film sheet being
6 selected from the group consisting of polyester, polyurethane and polycarbonate;

7 placing the formed film sheet in a mold cavity of an injection mold
8 having a shape defining the automotive component;

9 injecting a thermoplastic elastomer into the mold cavity of the
10 injection mold, such that the thermoplastic elastomer is in mating contact with a
11 bottom surface of the formed film sheet, to generate a structural carrier for the
12 formed film sheet, the generation of the structural carrier creating sufficient pressure
13 and heat to bond the structural carrier to the bottom surface of the formed film sheet
14 to form the molded laminate automotive component wherein the decorative layer of
15 metal is coated with a layer of polyvinylidene fluoride and a clear plastic layer.

1 18. The method of claim 17, wherein the polyvinylidene fluoride
2 comprises more than 50% of the total thickness of the film sheet.

1 19. A metal-covered component manufactured by the method of
2 claim 1, claim 8, claim 9 or claim 17.